Contractor Involvement in Operational Testing

What Is Really Needed?

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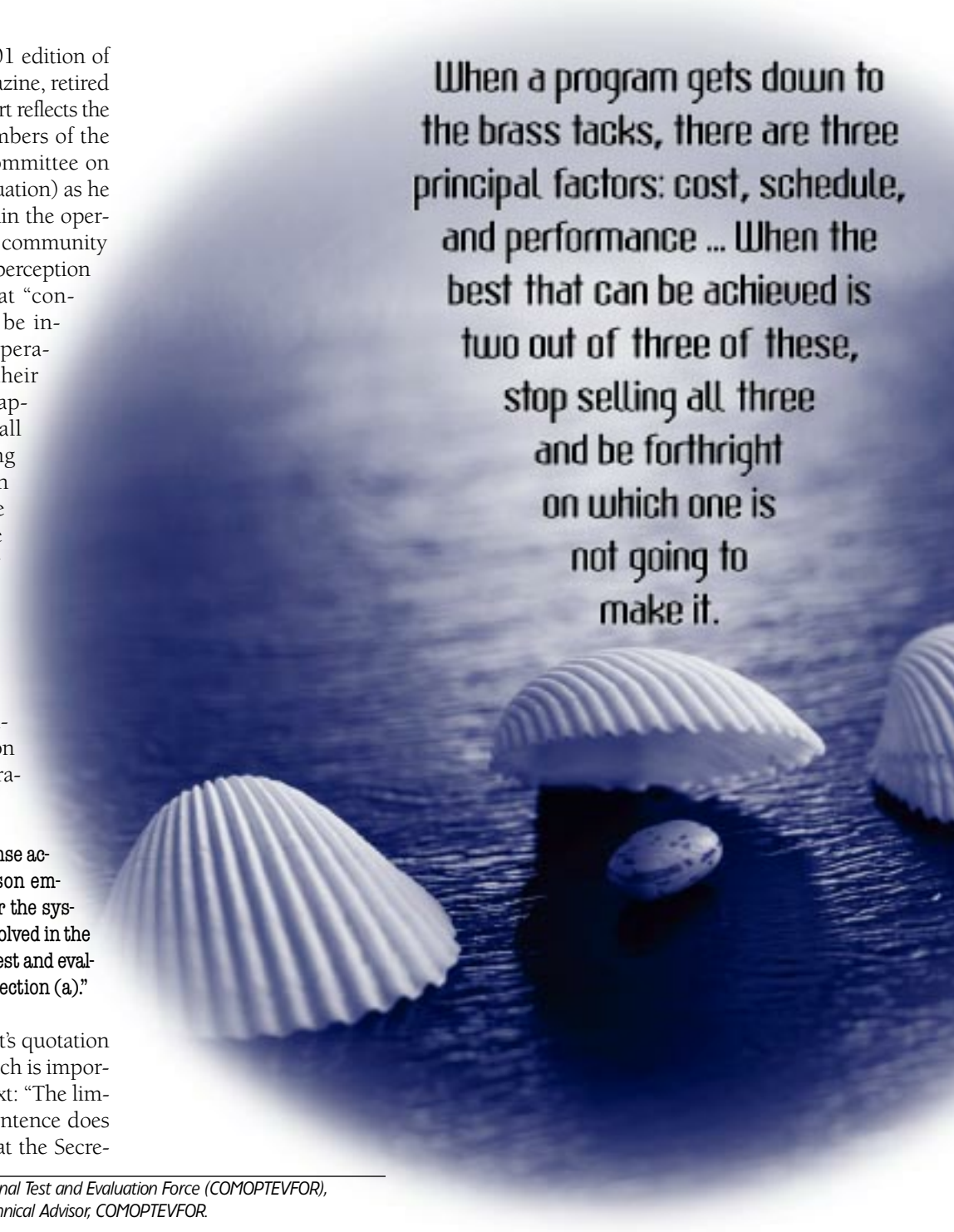
In the March-April 2001 edition of *Program Manager* Magazine, retired Army Col. John Stoddart reflects the voice of industry members of the ICOTE (Industrial Committee on Operational Test and Evaluation) as he describes the attitude within the operational test and evaluation community as secretive. He bases this perception upon a popular myth that "contractors, by law, can not be involved in any aspect of operational testing of their equipment," and that "...application of this myth to all areas of operational testing leads to longer acquisition periods, adds cost to the program, and weakens the close teamwork necessary to meet the challenges of providing the best equipment to the field."



Founded in Law

The "myth" that Col. Stoddart cites has its foundation in 10 U.S.C. Sec 2399 paragraph (d):

> "In the case of a major defense acquisition program, no person employed by the contractor for the system being tested may be involved in the conduct of the operational test and evaluation required under subsection (a)."

Missing from Col. Stoddart's quotation was the next sentence, which is important to the complete context: "The limitation in the preceding sentence does not apply to the extent that the Secre-

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tary of Defense plans for persons employed by that contractor to be involved in the operation, maintenance, and support of the system being tested when the system is deployed in combat."

Col. Stoddart advocates contractor participation because "Nowhere in the law does it say that a contractor can not have some involvement in the operational test, such as being allowed to observe the test; having access to copies of the Test and Evaluation Master Plan, including the operational test portion; being allowed to participate as an observer in Integrating Integrated Process Teams; or even being provided early test data."

"Long Pole in the Tent"

We will readily second his viewpoint that a closer and more direct working relationship between the operational testers and industry is warranted and necessary. Yet we are concerned that Col. Stoddart and his cohorts believe that operational testing is the "long pole in the tent" in fielding a system, and that industry "observation" of Operational Test (OT) and access to program documentation will, in some manner, significantly improve the acquisition process.

While some small increase in efficiencies might be possible, we'd suggest that industry must look elsewhere for significant gains. Currently, Navy OT averages less than 1 percent of total program cost and takes less than 7 percent of program development time (assuming a five-year fielding effort). By these measures, our Navy operational test process is very efficient and effective.

The Reality

The acquisition process will not be noticeably shorter or cheaper with industry observation of testing and access to documents. What is needed is a shift in the pervasive mindset within the acquisition community that:

The warfighter needs it *Now*!

This sales pitch is used more often than the ubiquitous "It's New and Improved" commercial marketing technique. What warfighters *really* need is a system that works reliably when they need it the most – during combat. A system that works in an unstressed, non-threatening situation is useless if it fails to perform during combat.

We can make it right *after* we get it in the Fleet.

Providing warfighters with a system you know does not meet either their needs or requirements is a professional and moral disservice. Planning to "fix it after it's fielded" places the operational tester in a no-win situation. We are charged to evaluate system performance to the level stated in the operational requirements document; if the system can't perform to that level, it fails. If you know it won't perform to that level beforehand, make that known and work the issue out with the requirements sponsor and operational tester. It's frustrating for us – and expensive for industry – to find out after planning an operational test and expending funds that someone on the developmental side knew the system was unable to perform, but didn't say anything in time to adjust planning.

"We can do it better, faster, and cheaper."

We'll defer to the opinion of Edward Comstock, Principal Assistant for Acquisition, Programming and Budgeting in the office of the CNO. "When a program gets down to the brass tacks, there are three principal factors: cost, schedule, and performance. And the statement I often get from my program managers is, 'I can give you two.'" When the best that can be achieved is two out of three of these, stop selling all three and be forthright on which one is not going to make it.

What It Will Take

If we're to achieve "better, faster, and cheaper" acquisition, we need an awareness within the acquisition community that:

Sometimes you just can't get there from here.

At some point, preferably sooner than later, something may preclude a system from achieving its required capabilities. This could be cost, schedule, or a limitation in current technology. When this occurs, admit the reality of the situation and concede the effort. Invest the remaining resources in areas that offer greater promise of success.

Some technologies need to mature before they're adaptable for military use. The inherent immaturity of leading-edge technologies often makes them unsuitable for use in a military environment (e.g., shipboard, foxhole, etc.). They have their place in demonstrations and experiments, but not in combat. Some are unstable, unproven, or just cost-prohibitive for widespread military use.

Commercial products don't always translate easily into military environments. COTS [Commercial Off-the-Shelf Technology] products were not designed for combat, but for work in your home or office. Modifying COTS can lead away from interoperability, and too often has resulted in dysfunctional C4I [Command, Control, Communications, Computers and Intelligence] and weapon systems. The marketing technique of proclaiming "It's COTS, so it doesn't need testing," is irresponsible risk management.

One place a schedule can drive a program is into the ground.

Schedules are important, but they should not be the driving force of a program. Schedules are tools of measurement, better used to determine efficiency rather than when a system is ready for use. Your system development metrics need to be based on performance or achievement, not on the calendar. (We'll concede that PMs have a real challenge here, because their funding *is* calendar-based.)

Betting a program on a single test is poor risk management.

Would you try to graduate from a university with a degree in engineering by taking just one comprehensive final exam at the end of your four years? Unfortunately, some program managers try a variation of this idea when they reduce or just bypass the opportunity for assessments by operational testers, and place all their chips on the line in a single operational evaluation. Our experience in this regard has reconfirmed, "Hope is not a strategy for success."

Operational testing is the user's quality assurance process.

End-of-the-line quality assurance is a poor production practice. Too often operational testers are excluded from participating in developmental testing events and program reviews. Despite the clamor to "Get the OT community involved early," there is significant resistance to this concept. Many of the "traditional" excuses are still heard, e.g., "It's too early and the system still has problems." "If they see something, they'll tell everyone." "Program decisions are not the OTA's [Operational Test Agency's] concern – acquisition decisions don't affect OT."

Col. Stoddart poses the question, "Why can't industry have access to testing documents?" We ask the same question about Developmental Test (DT) documents (acquisition strategies, program baseline agreements, developmental test plans, data, and reports). The OT director needs DT and industry test plans, data, and reports to plan for efficient, non-redundant tests, and to capitalize on lessons learned.

Knowing and following the "rules" is a sure way to succeed.

We have a bounty of directives, regulations, instructions, policies, and procedures that govern acquisition and testing. The operational tester is dependent upon two of the fundamental items: an ORD [Operational Requirements Document] and a TEMP [Test and Evaluation Master Plan]. Both are requisite documents for any program, and both are essential to conduct OT. A disciplined following of the guidance for acquisition and testing is critical to your success.

Operational testers test to requirements, not contract specifications.

It's the Operational Requirements! When industry is provided the specifications for a system, or the government releases a request for proposal, the ORD or Concept of Operations Document (COOD) should also be provided. The requirements sponsor develops the ORD, and under the new DoD acquisition regulations, an ORD may not exist early in the program. In this case, a COOD (based on the Mission Needs Statement) will be the only document describing (albeit at a fairly high level) how the system will be used by the warfighter. The user, the Navy system developer, and the operational tester should develop the COOD jointly. The resource/requirements sponsor can then use the COOD to develop the ORD.

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The key word in operational test and evaluation is *operational*.

In the intended environment, against the projected threat, employing typical maintainers and operators is how *operational* is defined. We are often asked, "How are you going to test the system?" Our response is that we will test it the way the Fleet will use it – in an end-to-end mission scenario.

Navy OTA Position on Contractors in Operational Testing

The "value added" by controlled involvement of industry in operational testing outweighs the detriments. Observations of OT by qualified industry representatives could produce benefit in several areas. First, the observers could put into context any problems discovered during the test; they would see firsthand what worked and what didn't. They could provide feedback to the program office as well as their company, with an insight that they previously lacked. (How we'll be able to observe testing where only an operator and his or her system are present, e.g., an aircraft test, will require further exploration. We are confident, however, situations such as these are not insurmountable.)

Currently, we are developing a standard operating policy that will define how industry representatives will be allowed to observe our operational testing. It will include a requirement for the representative to execute a non-interference agreement, precluding any interaction with test personnel or equipment unless specifically requested by the operational test director. The observer will be allowed to take notes and will be provided data, *with program office permission*, to analyze failures if they occur.

Access to documentation is another area where the benefits outweigh perceived risks. Access to the ORD is essential if industry is to understand what the warfighter needs. Contract vehicles and specifications are not what the OT community uses as a measuring tool. *It's the Requirements.* When a Mission Needs Statement is translated to an ORD, and

an ORD is translated to a contract specification, "things" can get lost. *Keep Your Eye on the Requirements.*

Contractor access to the approved TEMP (with contractual or financial information redacted) is sensible. The TEMP is a program office document, however, and its control is the program office's responsibility and prerogative. Access to approved OT test plans makes sense too. Our standard procedure is to offer the program manager a brief on the test plan after it has been approved, and the contractor might find benefit in attending. For some reason, our experience has been that program managers generally decline this brief.

Industry observer participation in IPTs [Integrated Product Teams] is also an issue not in the control of the Navy OT community. Program managers charter IPTs, and they or their empowered representative chairs them. We are invited participants and have no control of or influence on whom is allowed to attend, observe, or participate. It seems reasonable to include industry representatives to comply with OSD [Office of the Secretary of Defense] and Navy acquisition reform initiatives of partnering with industry.

With regard to providing early test data to industry, the current procedure for Navy OT is to provide the program manager, as expeditiously as possible, all data relating to a system failure or anomaly discovered during OT. We accomplished this by sending an anomaly message from COMOPTEVFOR to the program manager. The program office restricts us from interfacing directly with industry developers. This prevents the possibility of perceived tasking to correct or investigate the cause of an anomaly. Direct operational tester feedback to industry developers might be misconstrued as the tester setting a requirement for the system through informal discussions. We do not want to be placed in a position of defending a casual "It would be nice if the system could..." type remark that the developer mistakenly construes as a requirement to pass testing.

Some Contractors' Involvement *Is* Legal and *Can* be Beneficial

Industry, Program Managers, and Operational Testers all can benefit from the open communication advocated by Col. Stoddart – but we must be realistic in our expectations of improvements in quality, economy, and efficiency. Our decision to proceed with this initiative is grounded solely in the belief that the potential for "good" (more effective and suitable equipment in the Fleet) outweighs that for "bad" (perception of loss of "independence" in operational test and evaluation).

Editor's Note: The authors welcome questions or comments on this article. Contact Whitehead at *WhiteheS@cotf.navy.mil*.

PENTAGON SEEKS IDEAS ON COMBATING TERRORISM

The Department of Defense announced today [Oct. 25, 2001] that the Under Secretary of Defense for Acquisition, Technology and Logistics and the Combating Terrorism Technology Support Office Technical Support Working Group are jointly sponsoring a Broad Agency Announcement (BAA) asking for help in fighting terrorism.

The BAA, issued Oct. 23 (No. 02-Q-4655), specifically seeks help in combating terrorism, defeating difficult targets, conducting protracted operations in remote areas, and developing countermeasures to weapons of mass destruction. Its objective is to find concepts that can be developed and fielded within 12 to 18 months.

The BAA provides for a three-phase process in which interested parties initially submit a one-page description of their concept. Initial responses are due by Dec. 23, 2001. After a review of a submission and if DoD is interested in further information, the submitter will then be asked to provide a more detailed description of up to 12 pages of the idea. Submitters of concepts that the Department is not interested in pursuing further will be so notified.

DoD will evaluate phase two submissions and ask those who have offered the most promising ideas to submit full proposals in a third phase that may form the basis for a contract. Phase two submitters who are not asked to submit full proposals will be so notified. Submitters of a full phase three proposal that is not accepted by the Department may request a formal debriefing. Debriefings will not be provided to phase one and phase two submitters whose concepts were not accepted.

Interested parties can obtain more information concerning this BAA by visiting *http://www.bids.tswg.gov*.

Editor's Note: This information is in the public domain at *http://www.defenselink.mil/news*.